

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 10-15 and 18 are presently active in this case. The present Amendment amends Claims 10-11 and 14-15; and cancels Claims 16-17. No new matter is added.

The outstanding Office Action objected to Claim 17 because of informalities. Claims 14-15 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 10 and 12-15 were rejected under 35 U.S.C. § 102(b) as anticipated by Jorgensen (U.S. Patent No. 4,336,000). Claims 11-12 and 16-17 were rejected under 35 U.S.C. § 103(a) as unpatentable over Jorgensen in view of Taplin (U.S. Patent No. 3,250,225). Claims 10-17 were rejected under 35 U.S.C. § 103(a) as unpatentable over Taplin in view of Jorgensen. Claim 18 was rejected under 35 U.S.C. § 103(a) as unpatentable over Lemaire (U.S. Patent No. 5,421,295) in view of Jorgensen.

In response to the objection to Claim 17, the language of Claim 17 is amended to correct the noted informalities.

In light of their formal nature, the changes to the claims do not raise a question of new matter.

In response to the rejection under 35 U.S.C. § 112, second paragraph, Claims 14-15 are amended to correct the noted informalities. In view of amended Claims 14-15, it is believed that all pending claims are definite and no further rejection on that basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner in a joint effort to derive mutually acceptable language.

In order to clarify Applicant's invention, Claim 10 is amended to recite a manifold and the limitations of Claim 17 regarding the dish-shaped seal, as well as other features related to the dish-shaped seal disclosed at page 6, lines 10-15 of Applicant's specification and shown in Figs. 3-4. Therefore, the changes to Claim 10 find non-limiting support in the disclosure as originally filed and are not believed to raise a question of new matter.¹

In response to the rejection of Claims 10 and 12-15 under 35 U.S.C. § 102(b), in view of the amendment to Claim 10 incorporating the dish-shaped feature of Claim 17, this rejection is now moot.

In response to the rejections under 35 U.S.C. §103(a), and in view of the present amendment, Applicant respectfully requests reconsideration of these rejections and traverses the rejections, as discussed next.

Briefly recapitulating, Applicant's invention, as recited in amended Claim 10, relates to a dosing pump for a liquid additive in fuel of a heavy fuel engine. The pump includes a piston; a cylinder; an actuator for moving the piston axially in the cylinder; a manifold, and a low friction ***dish-shaped seal***. The dish-shaped seal includes a peripheral portion forming a seal *between the cylinder and the manifold* in a fully extended position of the piston. The dish-shaped seal further has a *top portion attached to the piston* and moving with the piston such that *the top portion of the seal is compressed against the manifold* in the fully extended position of the piston.

Turning now to the applied prior art, Jorgensen discloses a dosage piston pump with a concave head, apparently to avoid attracting air bubbles (see col. 8, lines 20-28), which is the main concern of the Jorgensen patent. Applicant submits that a person of ordinary skill in the art would not consider adding the rolling diaphragm of Taplin to the dosage piston pump of

¹ See MPEP 2163.06 stating that "information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter."

Jorgensen because such a modification would go against one of the principles of operation of Jorgensen.

Further, Taplin's rolling diaphragm differs from the claimed dish-shaped seal of the present application. Taplin's rolling diaphragm is not dish-shaped. In addition, Taplin's rolling diaphragm leaves a finite amount of fluid trapped inside the creases of the rolling diaphragm when the piston is in the fully extended position, i.e. when the cylinder is supposed to be completely emptied. This limits the precision of the pump, compared to the claimed pump of the present application. When using the pump for displacing fuel additives, as is claimed in the present application, even small amounts of fluid left in the cylinder may have severe consequences in terms of flake-forming and deterioration of the quality of the additive. This feature is not disclosed by Taplin. More to the point, ***Taplin fails to teach the claimed dish-shaped seal that includes a peripheral portion forming a seal between the cylinder and the manifold in a fully extended position of the piston, and a top portion attached to the piston and moving with the piston such that the top portion of the seal is compressed against the manifold in the fully extended position of the piston.***

All claim limitations must be considered when analyzing the non-obviousness of an invention.² In the present case, even if the combination of the Jorgensen and Taplin references is assumed to be proper, the combination fails to disclose the claimed invention. Accordingly, Applicant respectfully traverses, and requests reconsideration of, the obviousness rejection based on these references.

The applied combination also fails to disclose the features of the dependent claims combined with those of Claim 10.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in

² See MPEP 2143.03

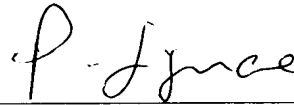
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condition for formal Allowance. A Notice of Allowance for Claims 10-15 and 18 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

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